



## A CLEAN SET OF CLAIMS 09/721,213

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A composite comprising: a gel denoted by G, being physically interlocked or in physical contact with a selected material M forming the combination  $G_n M_n$ ,  $G_n M_n G_n$ ,  $M_n G_n M_n$ ,  $M_n G_n G_n M_n$ ,  $G_n M_n M_n G_n$ ,  $G_n M_n G_n M_n G_n$ ,  $M_n M_n M_n G_n$ ,  $M_n M_n M_n G_n M_n M_n M_n$  or a permutation of one or more of said  $G_n$  with  $M_n$ ; wherein when n is a subscript of M, n is the same or different selected from the group consisting of paper, foam, plastic, fabric, metal, metal foil, concrete, wood, glass, glass fibers, ceramics, synthetic resin, synthetic fibers or refractory materials; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity; said gel comprising: (i) 100 parts by weight of one or more block copolymers with at least one midblock of poly(ethylene) having a measurable amount of polyethylene crystallinity characterized by knotty tears and greater tear resistance as opposed to smooth tears and lower tear resistance of gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers; said (i) block copolymers selected from poly(styrene-ethylene-ethylene-butylene-styrene), poly(styrene-ethylene-ethylene-propylene-styrene), poly(styrene-ethylene-ethylene-butylene<sub>25</sub>-styrene), poly(styrene-ethylene-propylene-ethylene-styrene), poly(styrene-ethylene-ethylene-butylene)<sub>n</sub>, poly(styrene-ethylene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-ethylene-butylene<sub>25</sub>)<sub>n</sub>, poly(styrene-ethylene-propylene-ethylene)<sub>n</sub>, or mixtures thereof, wherein subscript n is two or more; (ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gel characterized by a gel gram Bloom of about 2 gram to about 1,800 gram Bloom; and in combination with or without (iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), poly(styrene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-butylene)<sub>n</sub>, polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one.

6. A composite comprising: a gel denoted by G, being physically interlocked or in physical contact with a selected material M or in combination with one or more of the same gel or a different gel forming a composite of the combination  $G_n G_n$ ,  $G_n G_n G_n$ ,  $G_n M_n$ ,  $G_n M_n G_n$ ,  $M_n G_n M_n$ ,  $M_n G_n G_n$ ,  $M_n M_n M_n G_n M_n$ ,  $M_n G_n G_n M_n$ ,  $G_n M_n G_n G_n$ ,  $G_n G_n M_n M_n$ ,  $G_n M_n M_n G_n$ ,  $G_n G_n M_n G_n M_n G_n G_n$ ,  $G_n M_n G_n M_n M_n$ ,  $M_n G_n M_n G_n M_n G_n$ ,  $G_n G_n M_n M_n G_n$ ,  $G_n G_n M_n G_n M_n$ ,  $G_n G_n M_n G_n M_n G_n$ ,  $G_n M_n G_n M_n G_n$ ,  $M_n M_n M_n G_n$ ,  $M_n M_n M_n G_n M_n M_n M_n$  or a permutation of one or more of said  $G_n$  with  $M_n$ ; wherein when n is a subscript of M, n is the same or different selected from the group consisting of paper, foam, plastic, fabric, metal, metal foil, concrete, wood, glass, glass fibers, ceramics, synthetic resin, synthetic fibers or refractory materials; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity; said gel comprising: (i) 100 parts by weight of one or more block copolymers with at least one midblock of poly(ethylene) having a measurable amount of crystallinity characterized by greater fatigue resistance than gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers, said (i) block copolymers selected from poly(styrene-ethylene-ethylene-butylene-styrene), poly(styrene-ethylene-ethylene-propylene-styrene), poly(styrene-ethylene-ethylene-butylene<sub>25</sub>-styrene), poly(styrene-ethylene-propylene-ethylene-styrene), poly(styrene-ethylene-ethylene-butylene)<sub>n</sub>, poly(styrene-ethylene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-ethylene-butylene<sub>25</sub>)<sub>n</sub>, poly(styrene-ethylene-propylene-ethylene)<sub>n</sub>, or mixtures thereof, wherein subscript n is two or more; (ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gel characterized by a gel gram Bloom of about 2 gram to about 1,800 gram Bloom; and in combination with or without (iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), poly(styrene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-butylene)<sub>n</sub>, polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; said gel capable of exhibiting stress induced crystallinity and having greater fatigue resistance than gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers.

8. A composite according to claim 5, wherein said composite being formed into a gel hand exercising grip, a gel shape floss suitable for use as a dental floss, a gel crutch cushion, a gel cervical pillow, a gel bed wedge pillow, a gel leg rest, a gel neck cushion, a gel mattress, a gel bed pad, a gel elbow pad, a gel dermal pad, a gel wheelchair cushion, a gel helmet liner, a gel cold and hot pack, a gel exercise weight belt, a gel traction pad or belt, a gel cushion for splints, a gel sling, a gel brace for the hand, wrist, finger, forearm, knee, leg, clavicle, shoulder, foot, ankle, neck, back, rib, a gel sole for orthopedic shoe, a gel shaped toy article, a gel optical cladding for cushioning optical fibers from bending stresses, a gel swab tip, a gel fishing bate, a gel seal against pressure, a gel thread, a gel strip, a gel yarn, a gel tape, a weaved gel cloth, a gel fabrics, a gel balloon for valvuloplasty of the mitral valve, a gel trointestinal balloon dilator, a gel esophageal balloon dilator, a gel dilating balloon catheter use in coronary angiogram, a gel condom, a gel toy balloon, a gel surgical and examination glove, a self sealing enclosures for splicing electrical and telephone cables and wires, a gel film, or a gel liner.

9. A composite of claim 6 shaped in the form of a gel liner for lower limb or above the knee amputee prosthesis formed by injection molding, extruding, spinning, casting, or dipping of said gel, wherein said gel comprises at least one said block copolymer of poly(styrene-ethylene-ethylene-propylene-styrene), poly(styrene-ethylene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-ethylene-butylene-styrene), or poly(styrene-ethylene-ethylene-butylene)<sub>n</sub> or a mixture of two or more of said block copolymers.

10. A composite of claim 6 shaped in the form of a gel liner for lower limb or above the knee amputee prosthesis formed by injection molding, extruding, spinning, casting, or dipping of said gel, wherein said gel comprises at least one said block copolymer of poly(styrene-ethylene-ethylene-propylene-styrene), poly(styrene-ethylene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-ethylene-butylene-styrene), or poly(styrene-ethylene-ethylene-butylene)<sub>n</sub>, or a mixture of two or more of said block copolymers.

11. A composite comprising a gel,  $G_n$ , formed from

(I) 100 parts by weight of one or more linear, branched, star-shaped (radial), or multiarm block copolymers or mixtures of two or more such block copolymers, said block copolymers having one or more midblocks, said midblocks comprising one or more polyethylene midblocks and with (i) one or more amorphous midblocks or (ii) without amorphous midblocks, and in combination with or without a selected amount of one or more (II) polymers or copolymers, and selected amounts of (III) a plasticizing oil sufficient to achieve gel rigidities of from less than about 2 gram Bloom to about 1,800 gram Bloom, with the proviso when said (I) block copolymers without any amorphous midblocks are combined with at least one block copolymer having at least one amorphous midblock, that said midblocks of said (I) block copolymers forming said gel comprises a measurable amount of polyethylene crystallinity characterized by knotty tears and greater tear resistance as opposed to smooth tears and lower tear resistance of gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers; said (II) polymer or copolymer selected from poly(styrene-butadiene-styrene), poly(styrene-butadiene) $_n$ , poly(styrene-isoprene) $_n$ , poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), poly(styrene-ethylene-propylene) $_n$ , poly(styrene-ethylene-butylene) $_n$ , polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein  $n$  is greater than one; and wherein said composite formed from the combination  $G_nM_n$ ,  $G_nM_nG_n$ ,  $M_nG_nM_n$ ,  $M_nG_nG_n$ ,  $G_nG_nM_n$ ,  $M_nM_nM_nG_n$ ,  $M_nM_nM_nG_nM_n$ ,  $M_nG_nG_nM_n$ ,  $G_nM_nG_nG_n$ ,  $G_nM_nM_nG_n$ ,  $G_nM_nM_nG_n$ ,  $G_nG_nM_nM_n$ ,  $G_nG_nM_nG_nM_n$ ,  $G_nM_nG_nG_n$ ,  $G_nG_nM_n$ ,  $G_nM_nG_nM_nM_n$ ,  $M_nG_nM_nG_nM_nG_n$ ,  $G_nG_nM_nM_nG_n$ ,  $G_nG_nM_nG_nM_nG_n$ , a sequential addition or a permutation of one or more of said  $G_n$  with  $M_n$ ; wherein when  $n$  is a subscript of  $M$ ,  $n$  is the same or different selected from the group consisting of foam, plastic, fabric, glass, ceramics, synthetic resin, or synthetic fibers; and wherein when  $n$  is a subscript of  $G$ ,  $n$  denotes the same or a different gel rigidity.

12. A composite comprising a gel,  $G_n$ , formed from

(i) 100 parts by weight of one or more block copolymers having a polyethylene midblock of the formula poly(styrene-ethylene-ethylene-propylene-styrene) exhibiting a measurable amount of

polyethylene crystallinity characterized by knotty tears and greater tear resistance as opposed to smooth tears and lower tear resistance of gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers, wherein said block copolymer is a high viscosity copolymer having a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 25°C of at about 80,000 cps and higher, and from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gelatinous elastomer compositions characterized by a gel gram Bloom rigidity of about 20 to about 800 gram bloom; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), poly(styrene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-butylene)<sub>n</sub>, polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; and wherein said composite formed from the combination  $G_n M_n$ ,  $G_n M_n G_n$ ,  $M_n G_n M_n$ ,  $M_n G_n G_n$ ,  $G_n G_n M_n$ ,  $M_n M_n M_n G_n$ ,  $M_n M_n M_n G_n M_n$ ,  $M_n G_n G_n M_n$ ,  $G_n M_n G_n G_n$ ,  $G_n M_n M_n G_n$ ,  $G_n M_n M_n G_n$ ,  $G_n G_n M_n M_n$ ,  $G_n G_n M_n G_n M_n$ ,  $G_n M_n G_n G_n$ ,  $G_n G_n M_n$ ,  $G_n M_n G_n M_n M_n$ ,  $M_n G_n M_n G_n M_n G_n$ ,  $G_n G_n M_n M_n G_n$ ,  $G_n G_n M_n G_n M_n G_n$ , a sequential addition or a permutation of one or more of said  $G_n$  with  $M_n$ ; wherein when n is a subscript of M, n is the same or different selected from the group consisting of foam, plastic, fabric, glass, ceramics, synthetic resin, or synthetic fibers; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity.

### 13. A composite comprising a gel, $G_n$ , formed from

(i) 100 parts by weight of one or more block copolymers having a polyethylene midblock of the formula poly(styrene-ethylene-ethylene-propylene-styrene) exhibiting a measurable amount of polyethylene crystallinity characterized by greater fatigue resistance than gels having corresponding

rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers, wherein said block copolymer is a high viscosity copolymer having a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 25°C of at about 80,000 cps and higher, and from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gelatinous elastomer compositions characterized by a gel gram Bloom of about 20 to about 800 gram bloom; and in combination with or without

(iii) a selected amount of one or more polymers or copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), poly(styrene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-butylene)<sub>n</sub>, polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, or polyethylene, wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; and wherein said composite formed from the combination  $G_nM_n$ ,  $G_nM_nG_n$ ,  $M_nG_nM_n$ ,  $M_nG_nG_n$ ,  $G_nG_nM_n$ ,  $M_nM_nM_nG_n$ ,  $M_nM_nM_nG_nM_n$ ,  $M_nG_nG_nM_n$ ,  $G_nM_nG_nG_n$ ,  $G_nM_nM_nG_n$ ,  $G_nM_nM_nG_n$ ,  $G_nG_nM_nM_n$ ,  $G_nG_nM_nG_nM_n$ ,  $G_nM_nG_nG_n$ ,  $G_nG_nM_n$ ,  $G_nM_nG_nM_nM_n$ ,  $M_nG_nM_nG_nM_nG_n$ ,  $G_nG_nM_nM_nG_n$ ,  $G_nG_nM_nG_nM_nG_n$ , a sequential addition or a permutation of one or more of said  $G_n$  with  $M_n$ ; wherein when n is a subscript of M, n is the same or different selected from the group consisting of foam, plastic, fabric, glass, ceramics, synthetic resin, or synthetic fibers; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity.

14. A composite comprising a ge,  $G_n$ , formed from

(i) 100 parts by weight of one or more block copolymers having a polyethylene midblock of the formula poly(styrene-ethylene-ethylene-propylene-styrene) exhibiting a measurable amount of polyethylene crystallinity characterized by stress induced crystallinity not exhibited by gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-

propylene-styrene) block copolymer, wherein said block copolymer is a high viscosity copolymer having a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 25°C of at about 80,000 cps and higher, and from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gelatinous elastomer compositions characterized by a gel gram Bloom of about 20 to about 800 gram bloom; and in combination with or without

(iii) a selected amount of one or more block copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>; a selected amount of one or more diblock copolymers of poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene); a selected amount of a hydrocarbon resins including polystyrene, polypropylene, or polyethylene; a selected amount of polybutylene; a selected amount of rubbers of poly(ethylene-propylene) or poly(ethylene-butylene); a selected amount of a flame retardant; a selected amount of non-adhering, non-sticking modifiers; a selected amount of microspheres or aggregation of gas bubbles; a selected amount of microspheres or aggregation of gas bubbles; wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; and wherein said composite formed from the combination  $G_n M_n$ ,  $G_n M_n G_n$ ,  $M_n G_n M_n$ ,  $M_n G_n G_n$ ,  $G_n G_n M_n$ ,  $M_n M_n M_n G_n$ ,  $M_n M_n M_n G_n M_n$ ,  $M_n G_n G_n M_n$ ,  $G_n M_n G_n G_n$ ,  $G_n M_n M_n G_n$ ,  $G_n M_n M_n G_n$ ,  $G_n G_n M_n M_n$ ,  $G_n G_n M_n G_n M_n$ ,  $G_n M_n G_n G_n$ ,  $G_n G_n M_n$ ,  $G_n M_n G_n M_n M_n$ ,  $M_n G_n M_n G_n M_n G_n$ ,  $G_n G_n M_n M_n G_n$ ,  $G_n G_n M_n G_n M_n G_n$ , a sequential addition or a permutation of one or more of said  $G_n$  with  $M_n$ ; wherein when n is a subscript of M, n is the same or different selected from the group consisting of foam, plastic, fabric, glass, ceramics, synthetic resin, or synthetic fibers; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity.

15. A composite comprising a gel,  $G_n$ , formed from

(i) 100 parts by weight of one or more block copolymers having a polyethylene midblock of

poly(styrene-ethylene-ethylene-propylene-styrene) exhibiting a measurable amount of polyethylene crystallinity characterized by stress induced crystallinity not exhibited by gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers, wherein said block copolymer is a high viscosity copolymer having a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 25°C of at about 80,000 cps and higher, and from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gelatinous elastomer compositions characterized by a gel gram Bloom of about 20 to about 800 gram bloom; and in combination with or without

(iii) a selected amount of one or more block copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>; a selected amount of one or more diblock copolymers of poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene); a selected amount of a hydrocarbon resins including polystyrene, polypropylene, or polyethylene; a selected amount of polybutylene; a selected amount of rubbers of poly(ethylene-propylene) or poly(ethylene-butylene); a selected amount of a flame retardant; a selected amount of non-adhering, non-sticking modifiers; a selected amount of microspheres or aggregation of gas bubbles; wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein n is greater than one; and wherein said composite formed from the combination  $G_n M_n$ ,  $G_n M_n G_n$ ,  $M_n G_n M_n$ ,  $M_n G_n G_n$ ,  $G_n G_n M_n$ ,  $M_n M_n M_n G_n$ ,  $M_n M_n M_n G_n M_n$ ,  $M_n G_n G_n M_n$ ,  $G_n M_n G_n G_n$ ,  $G_n M_n M_n G_n$ ,  $G_n M_n M_n G_n$ ,  $G_n G_n M_n M_n$ ,  $G_n G_n M_n G_n M_n$ ,  $G_n M_n G_n G_n$ ,  $G_n G_n M_n$ ,  $G_n M_n G_n M_n M_n$ ,  $M_n G_n M_n G_n M_n G_n$ ,  $G_n G_n M_n M_n G_n$ ,  $G_n G_n M_n G_n M_n G_n$ , a sequential addition or a permutation of one or more of said  $G_n$  with  $M_n$ ; wherein when n is a subscript of M, n is the same or different selected from the group consisting of foam, plastic, fabric, glass, ceramics, synthetic resin, or synthetic fibers; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity.



16. A composite comprising a gel,  $G_n$ , formed from

(i) 100 parts by weight of one or more

block copolymers having a polyethylene midblock of poly(styrene-ethylene-ethylene-propylene-styrene) exhibiting a measurable amount of polyethylene crystallinity characterized by stress induced crystallinity not exhibited by gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers, wherein said block copolymer is a high viscosity copolymer having a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 25°C of at about 80,000 cps and higher, and from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gelatinous elastomer compositions characterized by a gel gram Bloom of about 20 to about 800 gram bloom; and in combination with or without

(iii) a selected amount of one or more block copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene) $_n$ , poly(styrene-isoprene) $_n$ , poly(styrene-ethylene-propylene) $_n$ , or poly(styrene-ethylene-butylene) $_n$ ; a selected amount of one or more diblock copolymers of poly(styrene-butadiene) $_n$ , poly(styrene-isoprene) $_n$ , poly(styrene-ethylene-propylene) $_n$ , or poly(styrene-ethylene-butylene) $_n$ , poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene); a selected amount of a hydrocarbon resins including polystyrene, polypropylene, or polyethylene; a selected amount of polybutylene; a selected amount of rubbers of poly(ethylene-propylene) or poly(ethylene-butylene); a selected amount of a flame retardant; a selected amount of non-adhering, non-sticking modifiers; a selected amount of microspheres or aggregation of gas bubbles; wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer, wherein  $n$  is greater than one; and wherein said composite formed from the combination  $G_nM_n$ ,  $G_nM_nG_n$ ,  $M_nG_nM_n$ ,  $M_nG_nG_n$ ,  $G_nG_nM_n$ ,  $M_nM_nM_nG_n$ ,  $M_nM_nM_nG_nM_n$ ,  $M_nG_nG_nM_n$ ,  $G_nM_nG_nG_n$ ,  $G_nM_nM_nG_n$ ,  $G_nM_nM_nG_n$ ,  $G_nG_nM_nM_n$ ,  $G_nG_nM_nG_nM_n$ ,  $G_nM_nG_nG_n$ ,  $G_nG_nM_n$ ,  $G_nM_nG_nM_nM_n$ ,  $M_nG_nM_nG_nM_nG_n$ ,  $G_nG_nM_nM_nG_n$ ,  $G_nG_nM_nG_nM_nG_n$ , a sequential addition or a permutation of one or more of said  $G_n$  with  $M_n$ ; wherein when  $n$  is a subscript of  $M$ ,  $n$  is the same or different selected from the group consisting of foam, plastic, fabric, glass,

ceramics, synthetic resin, or synthetic fibers; and wherein when n is a subscript of G, n denotes the same or a different gel rigidity.

17. A composite comprising a gel, G<sub>n</sub>, formed from

(i) 100 parts by weight of one or more block copolymers having a polyethylene midblock of the formula poly(styrene-ethylene-ethylene-propylene-styrene) exhibiting a measurable amount of polyethylene crystallinity characterized by stress induced crystallinity not exhibited by gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers, wherein said (i) block copolymer is a high viscosity copolymer having a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 25°C of at about 80,000 cps and higher, and from

(ii) about 300 to about 1,600 parts by weight of a plasticizing oil; said gelatinous elastomer compositions characterized by a gel gram Bloom of about 20 to about 800 gram bloom; and in combination with:

(iii) a selected amount of one or more block copolymers of poly(styrene-butadiene-styrene), poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>;

(iv) a selected amount of one or more diblock copolymers of poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene);

(v) a selected amount of a hydrocarbon resins including polystyrene, polypropylene, or polyethylene, or polybutylene;

(vi) a selected amount of rubbers of poly(ethylene-propylene) or poly(ethylene-butylene);

(vii) a selected amount of a flame retardant;

(viii) a selected amount of non-adhering, non-sticking additives including antiblocking agents including tetrakis[methylene 3, -(3'5'-di-tert-butyl-4"-hydroxyphenyl) propionate] methane, octadecyl 3-(3",5"-di-tert-butyl-4"-hydroxyphenyl) propionate, distearyl- pentaerythritol-dipropionate,

thiodiethylene bis-(3,5-ter-butyl-4-hydroxy) hydrocinnamate,  
(1,3,5-trimethyl-2,4,6-tris[3,5-di-tert-butyl-4-hydroxybenzyl] benzene),  
4,4"-methylenebis(2,6-di-tert-butylphenol), additives of stearic acid, oleic acid, stearamide, behenamide,  
oleamide, erucamide, N,N"-ethylenebisstearamide, N,N"-ethylenebisoleamide, stereryl erucamide, erucyl  
erucamide, oleyl palmitamide, stearyl stearamide, erucyl stearamide, waxes, and silicone fluids;

(ix) a selected amount of microspheres, aggregation of gas bubbles, or blowing agents;

(x) one or more additives selected from the group consisting of polyisobutylene including  
polybutene, hydrocarbon resins including polymerized mixed olefins, polyterpene, glycerol ester of  
rosin, pentaerythritol ester of rosin, saturated alicyclic hydrocarbon, coumarone indene, hydrocarbon,  
mixed olefin, alkylated aromatic hydrocarbon, polyalphamethylstyrene/vinyl toluene copolymer,  
polystyrene, and elastomeric diblock copolymers of poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>,  
poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>, poly(styrene-butadiene)<sub>n</sub>,  
poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>,  
poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene);

(xi) one or more additives selected from the group consisting of hydrocarbon resins, butyl  
rubber, polyisobutylene, additional block copolymers of poly(styrene-isoprene-styrene),  
poly(styrene-butadiene-styrene), poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-  
ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-butylene)<sub>n</sub>, polystyrene, polybutylene,  
poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, polyethylene, diblock copolymers of  
poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), stearic acid, oleic acid, stearamide,  
behenamide, oleamide, erucamide, N,N"-ethylenebisstearamide, N,N"-ethylenebisoleamide, stereryl  
erucamide, erucyl erucamide, oleyl palmitamide, stearyl stearamide, erucyl stearamide, waxes, and  
silicone fluids, magnetic particle materials, carbon blacks, silicon dioxide, silica, clay, feldspar, glass  
microspheres, barium ferrite, wollastonite, hydrocarbon resins of polymerized mixed olefins,  
polyterpene, glycerol ester of rosin, pentaerythritol ester of rosin, saturated alicyclic hydrocarbon,  
coumarone indene, hydrocarbon, mixed olefin, alkylated aromatic hydrocarbon;  
wherein said selected copolymer is a linear, radial, star-shaped, branched or multiarm copolymer,  
wherein n is greater than one; and  
wherein said composite formed from the combination:

(xii) layers of  $G_nM_n$ ,  $M_nG_nM_n$ ,  $M_nM_nG_n$ ,  $M_nM_nG_nM_n$ ,  $M_n$ , a sequential addition or a permutation of one or more of said  $G_n$  with  $M_n$ ; wherein when  $n$  is a subscript of  $M$ ,  $n$  is the same or different selected from the group consisting of foam, plastic, fabric, glass, ceramics, synthetic resin, or synthetic fibers; and wherein when  $n$  is a subscript of  $G$ ,  $n$  denotes the same or a different gel rigidity.

18. A composite comprising a gel characterized by a gel gram Bloom rigidity of about 20 to about 1,800 gram bloom, said composite made from

(i) a block copolymer having a polyethylene midblock exhibiting a measurable amount of polyethylene crystallinity characterized by knotty tears and greater tear resistance as opposed to smooth tears and lower tear resistance of gels having corresponding rigidity made from a poly(styrene-ethylene-butylene-styrene) or poly(styrene-ethylene-propylene-styrene) block copolymers,

(ii) a plasticizing oil,

(iii) an additive;

wherein said (i), (ii), and (iii) are mixed together to form said gelatinous elastomeric composition; wherein said block copolymer comprises A-B-A blocks having a weight average molecular weight of at least about 300,000 or more corresponding to a measurable solution viscosity at 5 wt% solids in 95% toluene at 25°C which solution remains a solid at 20 wt% solids in 80% toluene at 25°C which corresponds to a viscosity value at 5 weight percent solution in toluene at 30°C of about 90 cps and higher which corresponds to a viscosity at 10 weight percent of about 5800 cps and higher which corresponds to a viscosity at 20 weight percent solids solution in toluene at 25°C of about 80,000 cps and higher; said A being selected from monoalkenylarene polymers including polystyrene; said B being a hydrogenated polymer comprising a plurality of covalently linked conjugated diene monomers including a hydrogenated polymer of isoprene/butadiene; wherein said block copolymers is of the formula poly(styrene-ethylene-ethylene-propylene-styrene); wherein said plasticizer comprises at least 60 wt% of said gelatinous elastomer composition of said plasticizer and block copolymer,

(1) said composite having layers of,  $G_nM_n$ ,  $G_nM_nM_n$ , or  $M_nM_nG_nM_nM_n$ , wherein said additive is:

(2) an additive selected from the group consisting of aggregation of gas bubbles formed by inert gases, and blowing agents including water,

(3) an additive selected from the group consisting of tack modifiers including, antiblocking agents, non-adhering, non-sticking modifiers including tetrakis[methylene 3, -(3'5'-di-tertbutyl-4"-hydroxyphenyl) propionate] methane, octadecyl 3, -(3", 5"-di-tert-butyl-4"-hydroxyphenyl) propionate, distearyl- pentaerythritol-dipropionate, thiodiethylene bis-(3,5-ter-butyl-4-hydroxy) hydrocinnamate, (1,3,5-trimethyl-2,4,6-tris[3,5-di-tert-butyl-4-hydroxybenzyl] benzene), 4,4"-methylenebis(2,6-di-tert-butylphenol), additives of stearic acid, oleic acid, stearamide, behenamide, oicamide, erucamide, N,N"-ethylenebisstearamide, N,N"-ethylenebisoleamide, steryl erucamide, erucyl erucamide, oleyl palmitamide, stearyl stearamide, erucyl stearamide, waxes, and silicone fluids,

(4) an additive selected from the group consisting of polyisobutylene including polybutene, hydrocarbon resins including polymerized mixed olefins, polyterpene, glycerol ester of rosin, pentaerythritol ester of rosin, saturated alicyclic hydrocarbon, coumarone indene, hydrocarbon, mixed olefin, alkylated aromatic hydrocarbon, polyalphamethylstyrene/vinyl toluene copolymer, polystyrene, and elastomeric diblock copolymers of poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>, poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, or poly(styrene-ethylene-butylene)<sub>n</sub>, poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene),

(5) an additive selected from the group consisting of flame retardants,

(6) an additive selected from the group consisting of hydrocarbon resins, polyisobutylene including polybutene, additional block copolymers of poly(styrene-isoprene-styrene), poly(styrene-butadiene-styrene), poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>, poly(styrene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-butylene)<sub>n</sub>, particulate fillers, microspheres, butadiene rubber, poly(ethylene/propylene), and poly(ethylene/butylene),

(7) an additive selected from the group consisting of poly(styrene-butadiene-styrene), polystyrene, polybutylene, poly(ethylene-propylene), poly(ethylene-butylene), polypropylene, polyethylene, diblock copolymers of poly(styrene-butadiene)<sub>n</sub>, poly(styrene-isoprene)<sub>n</sub>,

poly(styrene-ethylene-propylene), poly(styrene-ethylene-butylene), poly(styrene-ethylene-propylene)<sub>n</sub>, poly(styrene-ethylene-butylene)<sub>n</sub>, stearic acid, oleic acid, stearamide, behenamide, oleamide, erucamide, N,N"-ethylenebisstearamide, N,N"-ethylenebisoleamide, stereryl erucamide, erucyl erucamide, oleyl palmitamide, stearyl stearamide, erucyl stearamide, waxes, and silicone fluids, and

(8) an additive selected from the group consisting of hydrocarbon resins of polystyrene, polymerized mixed olefins, polyterpene, glycerol ester of rosin, pentaerythritol ester of rosin, saturated alicyclic hydrocarbon, coumarone indene, hydrocarbon, mixed olefin, alkylated aromatic hydrocarbon, particulate fillers, and microspheres.

(New claim) 20. A composite of claim 5, shaped in the form of a gel liner for lower limb or above the knee amputee prosthesis formed by injection molding, extruding, spinning, casting, or dipping of said gel, wherein said gel comprises one or a mixture of two or more block copolymer of poly(styrene-ethylene-ethylene-propylene-styrene), and a source of said block copolymer being Septon® 4033, Septon® 4045, and Septon® 4055 or an equivalent.

(New claim) 21. A composite of claim 6, shaped in the form of a gel liner for lower limb or above the knee amputee prosthesis formed by injection molding, extruding, spinning, casting, or dipping of said gel, wherein said gel comprises one or a mixture of two or more block copolymer of poly(styrene-ethylene-ethylene-propylene-styrene), and a source of said block copolymer being Septon® 4033, Septon® 4045, and Septon® 4055 or an equivalent.

(New claim) 22. A composite of claim 5, wherein said composite being formed into a composite article into a gel hand exercising grip, a gel shape floss suitable for use as a dental floss, a gel crutch cushion, a gel cervical pillow, a gel bed wedge pillow, a gel leg rest, a gel neck cushion, a gel mattress, a gel bed pad, a gel elbow pad, a gel dermal pad, a gel wheelchair cushion, a gel helmet liner, a gel cold and hot pack, a gel exercise weight belt, a gel traction pad or belt, a gel cushion for splints, a gel sling, a gel brace for the hand, wrist, finger, forearm, knee, leg, clavicle, shoulder, foot, ankle, neck, back, rib, a gel sole for orthopedic shoe, a gel shaped toy article, a gel optical cladding for cushioning optical fibers from bending stresses, a gel swab tip, a gel fishing bate, a gel seal against pressure, a gel

thread, a gel strip, a gel yarn, a gel tape, a weaved gel cloth, a gel fabrics, a gel balloon for valvuloplasty of the mitral valve, a gel trointestinal balloon dilator, a gel esophageal balloon dilator, a gel dilating balloon catheter use in coronary angiogram, a gel condom, a gel toy balloon, a gel surgical and examination glove, a self sealing enclosures for splicing electrical and telephone cables and wires, a gel film, or a gel liner; said block copolymer of said article is poly(styrene-ethylene-ethylene propylene-styrene), and a source of said poly(styrene-ethylene-ethylene-propylene-styrene) being Septon® 4033, Septon® 4045, and Septon® 4055 or an equivalent.